1. A security article comprising:

a light transmissive substrate having a first surface and an opposing second surface, the first surface having an optical interference pattern;

a color shifting optical coating on the second surface of the substrate, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes; and

an adhesive layer on the optical coating.

2. The security article of claim 1, wherein the substrate comprises a plastic material.

3. The security article of claim 2, wherein the plastic material is selected from the group consisting of polyethylene terephthalate, polycarbonate, polyvinyl chloride, polyacrylates, polyacrylonitrile, polystyrene, polypropylene, cellulose diacetate, cellulose triacetate, polydicyclopentadiene, and mixtures and copolymers thereof.

4. The security article of claim 1, wherein the optical interference pattern is selected from the group consisting of a diffraction grating pattern, refraction pattern, holographic image pattern, corner cube reflector, zero order diffraction pattern, moiré pattern, and combinations thereof.

5. The security article of claim 1, wherein the optical interference pattern is selected from the group consisting of a Kinegram® device, and a Pixelgram® device.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

6. The security article of claim 1, wherein the optical interference pattern is a light interference pattern based on microstructures having dimensions of from about 0.1 μm to about 10 μm.

7. The security article of claim 1, wherein the color shifting optical coating is a multilayer optical interference film including an absorber layer on the second surface of the substrate, and a dielectric layer on the absorber layer.

8. The security article of claim 1, wherein the color shifting optical coating is a multilayer optical interference film including an absorber layer on the second surface of the substrate, a dielectric layer on the absorber layer, and a reflector layer on the dielectric layer.

9. The security article of claim 1, wherein the color shifting optical coating is a multilayer optical interference film including a first absorber layer on the second surface of the substrate, a dielectric layer on the first absorber layer, and a second absorber layer on the dielectric layer.

10. The security article of claim 1, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

11. The security article of claim 1, wherein the color shifting optical coating comprises a plurality of multilayer optical interference flakes dispersed in a polymeric medium.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

12. The security article of claim 1, wherein the color shifting optical coating is a multilayer optical interference film including an absorber layer on the second surface of the substrate, a dielectric layer on the absorber layer, a thin shear layer on the dielectric layer, and a reflector layer on the shear layer.

13. The security article of claim 12, wherein the shear layer has a thickness from about 50 Å to about 200 Å.

14. The security article of claim 1, wherein the combination of the optical interference pattern and the color shifting optical coating produce unique colors with viewing angle changes not achievable with either the optical interference pattern or the color shifting optical coating alone.

15. The security article of claim 1, wherein the color shifting optical coating includes a laser ablated image formed therein.

16. The security article of claim 15, wherein the laser ablated image is selected from the group consisting of digital images, bar codes, covert data, and combinations thereof.

17. The security article of claim 1, wherein the color shifting optical coating includes a laser scribed number.

18. The security article of claim 15, wherein the color shifting optical coating further includes a laser scribed number.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

19. A security article comprising:

a light transmissive substrate having a first surface and an opposing second surface, the first surface having an optical interference pattern;

a color shifting optical coating on a carrier sheet, the optical coating laminated to the second surface of the substrate by an adhesive layer, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes.

20. The security article of claim 19, wherein the optical interference pattern is selected from the group consisting of a diffraction grating pattern, refraction pattern, holographic image pattern, corner cube reflector, zero order diffraction pattern, moiré pattern, and combinations thereof.

21. The security article of claim 19, wherein the optical interference pattern is selected from the group consisting of a Kinegram® device, and a Pixelgram® device.

22. The security article of claim 19, wherein the optical interference pattern is a light interference pattern based on microstructures having dimensions of from about 0.1μm to about 10 μm.

23. The security article of claim 19, wherein the color shifting optical coating is a multilayer optical interference film including a reflector layer on the carrier sheet, a dielectric layer on the reflector layer, and an absorber layer on the dielectric layer.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

24. The security article of claim 19, wherein the color shifting optical coating is a multilayer optical interference film including a first absorber layer on the carrier sheet, a dielectric layer on the first absorber layer, and a second absorber layer on the dielectric layer.

25. The security article of claim 19, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

26. The security article of claim 19, wherein the color shifting optical coating comprises a plurality of multilayer optical interference flakes dispersed in a polymeric medium.

27. The security article of claim 19, wherein the color shifting optical coating is a multilayer optical interference film including a reflector layer on the carrier sheet, a thin shear layer on the reflector layer, a dielectric layer on the shear layer, and an absorber layer on the dielectric layer.

28. The security article of claim 27, wherein the shear layer has a thickness from about 50 Å to about 200 Å.

29. The security article of claim 19, wherein the color shifting optical coating includes a laser ablated image formed therein.

30. The security article of claim 29, wherein the laser ablated image is selected from the group consisting of digital images, bar codes, covert data, and combinations thereof.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

31. The security article of claim 19, wherein the color shifting optical coating includes a laser scribed number.

32. The security article of claim 29, wherein the color shifting optical coating further includes a laser scribed number.

33. The security article of claim 29, further comprising a covert resistive layer on the first surface of the substrate.

34. The security article of claim 33, wherein the covert resistive layer is composed of a transparent conductive material selected from the group consisting of indium tin oxide, indium oxide, cadmium tin oxide, and combinations thereof.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

35. A security article comprising:

a light transmissive substrate having a first surface and an opposing second surface, the first surface having an optical interference pattern;

a color shifting optical coating on a carrier sheet, the optical coating laminated to the first surface of the substrate by an adhesive layer, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes.

36. The security article of claim 35, wherein the optical interference pattern is selected from the group consisting of a diffraction grating pattern, refraction pattern, holographic image pattern, corner cube reflector, zero order diffraction pattern, moiré pattern, and combinations thereof.

37. The security article of claim 35, wherein the optical interference pattern is selected from the group consisting of a Kinegram® device, and a Pixelgram® device.

38. The security article of claim 35, wherein the optical interference pattern is a light interference pattern based on microstructures having dimensions of from about 0.1μm to about 10 μm.

39. The security article of claim 35, wherein the color shifting optical coating is a multilayer optical interference film including a reflector layer on the carrier sheet, a dielectric layer on the reflector layer, and an absorber layer on the dielectric layer.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

40. The security article of claim 35, wherein the color shifting optical coating is a multilayer optical interference film including a first absorber layer on the carrier sheet, a dielectric layer on the first absorber layer, and a second absorber layer on the dielectric layer.

41. The security article of claim 35, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

42. The security article of claim 35, wherein the color shifting optical coating comprises a plurality of multilayer optical interference flakes dispersed in a polymeric medium.

43. The security article of claim 35, wherein the color shifting optical coating includes a laser ablated image formed therein.

44. The security article of claim 35, wherein the color shifting optical coating includes a laser scribed number.

45. The security article of claim 43, wherein the color shifting optical coating further includes a laser scribed number.

46. The security article of claim 43, further comprising a covert resistive layer on the second surface of the substrate.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

47. A prelaminate color shifting structure comprising:

a light transmissive carrier sheet;

a color shifting optical coating formed on the carrier sheet, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes; and

a laser ablated image and/or a laser scribed number formed in the optical coating.

48. The prelaminate color shifting structure of claim 47, wherein the laser ablated image is selected from the group consisting of digital images, bar codes, covert data, and combinations thereof.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

49. A security article comprising:

a light transmissive substrate having a first surface and an opposing second surface, the first surface having an optical interference pattern; and

a color shifting optical coating on the first surface of the substrate, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes.

50. The security article of claim 49, further comprising an adhesive layer on the second surface the substrate.

51. The security article of claim 49, wherein the color shifting optical coating is a multilayer optical interference film including a reflector layer on the first surface of the substrate, a dielectric layer on the reflector layer, and an absorber layer on the dielectric layer.

52. The security article of claim 49, wherein the color shifting optical coating is a multilayer optical interference film including a first absorber layer on the first surface of the substrate, a dielectric layer on the first absorber layer, and a second absorber layer on the dielectric layer.

53. The security article of claim 49, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

54. A method of forming a security article, comprising the steps of:

obtaining a master shim having a first surface with a holographic or diffractive pattern thereon;

forming a color shifting optical coating on the first surface of the master shim so as to conform to the shape of the holographic or diffractive pattern;

affixing a carrier substrate layer to the optical coating; and

removing the optical coating and carrier substrate layer from the master shim to produce a security article with the holographic or diffractive pattern replicated in the optical coating, the optical coating providing an observable color shift to the security article as the angle of incident light or viewing angle changes.

55. The method of claim 54, wherein the master shim is composed of a metallic material selected from the group consisting of nickel, tin, chromium, and combinations thereof.

56. The method of claim 54, wherein the color shifting optical coating is a multilayer optical interference film including a dielectric layer interposed between two absorber layers.

57. The method of claim 54, wherein the color shifting optical coating is a multilayer optical interference film including an absorber layer, a dielectric layer, and a reflector layer.

58. The method of claim 54, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

59. The method of claim 54, wherein the color shifting optical coating is formed by physical vapor deposition.

60. The method of claim 54, wherein the carrier substrate layer comprises a plastic sheet.

61. The method of claim 54, further comprising the step of attaching the security article to an object with an adhesive.

62. The method of claim 61, wherein the adhesive is a pressure sensitive adhesive.

63. The method of claim 61, wherein the object is selected from the group consisting of security documents, monetary currency, credit cards, identification cards, passports, and merchandise packaging.

64. A security article formed by the method recited in claim 54.

65. A security article comprising a holographic or diffractive pattern in a multilayer thin film optical interference stack.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

66. A hot stamp structure for use in attaching a security article to an object, comprising:

a carrier sheet;

a release layer on the carrier sheet;

a light transmissive substrate on the release layer, the substrate having an optical interference pattern thereon;

a color shifting optical coating on the substrate, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes; and

an adhesive layer on the optical coating.

67. The hot stamp structure of claim 66, wherein the carrier sheet comprises a plastic material.

68. The hot stamp structure of claim 66, wherein the release layer comprises a material selected from the group consisting of polyvinyl chloride, polystyrene, chlorinated rubber, acrylonitrile-butadiene-styrene copolymer, nitrocellulose, methyl methacrylate, acrylic copolymers, fatty acids, waxes, gums, gels, and mixtures thereof.

69. The hot stamp structure of claim 66, wherein the color shifting optical coating is a multilayer optical interference film including a dielectric layer interposed between two absorber layers.

70. The hot stamp structure of claim 66, wherein the color shifting optical coating is a multilayer optical interference film including an absorber layer, a dielectric layer adjacent to the absorber layer, and a reflector layer adjacent to the dielectric layer.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

71. The hot stamp structure of claim 66, wherein the color shifting optical coating is a multilayer optical interference film comprising alternating layers of low and high index of refraction dielectric layers.

72. The hot stamp structure of claim 66, wherein the color shifting optical coating comprises a plurality of multilayer optical interference flakes dispersed in a polymeric medium.

73. The hot stamp structure of claim 66, wherein the color shifting optical coating includes a laser ablated image formed therein.

74. The hot stamp structure of claim 66, wherein the color shifting optical coating includes a laser scribed number.

75. The hot stamp structure of claim 73, wherein the color shifting optical coating further includes a laser scribed number.

76. The hot stamp structure of claim 66, wherein the adhesive layer is a thermally activated adhesive comprising a material selected from the group consisting of acrylic-based polymers, ethylene vinyl acetate, polyamides, and combinations thereof.

77. The hot stamp structure of claim 66, wherein the adhesive layer comprises a UV activated adhesive.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

78. A method of attaching a security article to an object, comprising the steps of:

providing a hot stamp structure, comprising:

a carrier sheet;

a release layer on the carrier sheet;

a light transmissive substrate on the release layer, the substrate having an optical interference pattern thereon;

a color shifting optical coating on the substrate, the optical coating providing an observable color shift as the angle of incident light or viewing angle changes; and

a thermally activated adhesive layer on the optical coating;

pressing the hot stamp structure onto a surface of an object which is heated to a temperature to provide a bond between the object and the adhesive layer; and

removing the carrier sheet from the substrate to reveal a security article attached to the object.

WORKMAN, NYDEGGER & SEELEY
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111